Appendix A

Curriculum Vitae

Vincent Tropepe
Whitehead Institute for Biomedical Research
Nine Cambridge Center, Room 439
Cambridge, MA 02142, USA
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EDUCATION

1994-2000 Ph.D. Program in Developmental Biology, University of Toronto

1990-1994 B.Sc. Combined Honours Biology and Psychology, McMaster University

RESEARCH TRAINING

2000-present Postdoctoral Fellow
Whitehead Institute for Biomedical Research
Massachusetts Institute of Technology
Supervisor: Dr. Hazel Sive
Subject: Molecular and genetic determinants of neural pattern formation in the vertebrate embryo

1994-2000 Graduate Student, Program in Developmental Biology
Department of Anatomy and Cell Biology
University of Toronto
Supervisor: Dr. Derek van der Kooy
Subject: Cellular and molecular characterization of mammalian neural stem cells in the developing and mature brain.

1990-1994 Research Assistant and Undergraduate Thesis Student
Department of Psychiatry and Behavioural Neurosciences
McMaster University
Supervisor: Dr. Sandra Witelson, FRSC
Subject: Neuroanatomical substrates of functional hemispheric asymmetry in the human cerebral cortex

AWARDS AND HONOURS

2000-2003	Canadian Institutes of Health Research Postdoctoral Fellowship
2000	Top 133 Young Leaders in Canada: Globe and Mail Canada Day Feature
1998-2000	Medical Research Council of Canada Doctoral Research Award
1999	Joe A. Connolly Memorial Award for Cell Biology
1998	J. Playfair McMurrich Fellowship in Anatomy
1998	Ontario Graduate Scholarship (declined)
1995-1998	Canadian Networks of Centres of Excellence Scholarship (Neuroscience Network)
1996-1997	University of Toronto Open Doctoral Fellowship
1993-1994	Dean's Honours List, McMaster University

PATENTS

1997 Retinal Stem Cells as Pharmaceuticals (Co-inventors: Dr. Derek van der Kooy, Dr. Roderick McInnes, Dr. Bernard Chiasson)

2001 Discovering Novel Neural Determination Genes Using Embryonic Stem Cells (Co-inventor: Dr. Derek van der Kooy)

SCIENTIFIC AFFILIATIONS

1994-present	Society for Neuroscience
1998-present	Society for Developmental Biology
1998-present	American Association of Anatomists
1998-present	The J. B. Johnston Club (Comparative and Evolutionary Neurobiology)

TEACHING EXPERIENCE

1999-2000	Teaching assistant in Neuroanatomy (ANA 206S: Physical Therapy Program), Department of Anatomy and Cell Biology, University of Toronto
1996-2000	Teaching assistant in Medical Histology (First year Medicine: Structure and Function; Metabolism and Nutrition), Department of Anatomy and Cell Biology, University of Toronto
1995-2000	Teaching assistant in Gross Anatomy, Neuroanatomy and Histology (ANA 300Y: Undergraduate Human Biology Program), Department of Anatomy and Cell Biology, University of Toronto
1998	Course Instructor in Anatomy and Physiology (APPE050: Perioperative Assistant Program), Michener Institute of Applied Health Sciences
1998	Section Demonstrator in Anatomy and Physiology (IG5032: Introduction to Medical Imaging), Michener Institute of Applied Health Sciences

COMMITTEES

1998-2000	Graduate Student Representative on Faculty Council, Faculty of Medicine, University of Toronto
1998	Organization Committee member for the Anatomy and Cell Biology Student Seminar Series, University of Toronto
1997	Member of Task Force on Restructuring the Academic Organization of the Department of Anatomy and Cell Biology, Faculty of Medicine, University of Toronto
1996-1997	Division IV: Life Sciences Representative Member of Graduate Students' Union Finance Committee, University of Toronto
1995-1997	Graduate Students' Union Representative for Anatomy and Cell Biology, University of Toronto
1996	Organization Committee member for the Anatomy and Cell Biology Student Seminar Series, University of Toronto
1994-1996	School of Graduate Studies Course Union President for Anatomy and Cell Biology, University of Toronto

1994-1995 Executive Treasurer for Anatomy and Cell Biology Graduate Student Association, University of Toronto

SCIENTIFIC PRESENTATIONS

2002 Building a Behaving Brain Symposium, University of Toronto, Toronto, ON, Canada (seminar)

2002 Seminars in Developmental Biology, MIT, Cambridge, MA, USA (seminar)

2001 Society for Neuroscience 31st Annual Meeting, San Diego, CA, USA (poster)

2000 Society for Neuroscience 30th Annual Meeting, New Orleans, LA, USA (poster)

1999 Society for Neuroscience 29th Annual Meeting, Miami, FL, USA (poster)

1999 Joe A. Connolly Memorial Award in Cell Biology, University of Toronto, Toronto, ON, Canada (seminar)

1999 Graduate Program in Developmental Biology Retreat, University of Toronto, Toronto, ON, Canada (seminar)

1999 Whitehead Institute for Biomedical Research, MIT (seminar)

1999 Department of Molecular and Cellular Biology, Harvard University (seminar)

1999 Institute of Neuroscience, University of Oregon (seminar)

1998 Society for Neuroscience 28th Annual Meeting, Los Angeles, CA, USA (poster)

1998 J. Playfair McMurrich Fellowship in Anatomy, University of Toronto, Toronto, ON, Canada (seminar)

1998 Society for Developmental Biology 57th Annual Meeting, Stanford University, Palo Alto, CA, USA (poster)

1998 Graduate Program in Developmental Biology Retreat, University of Toronto, Toronto, ON, Canada (seminar)

1997 Neuroscience Network Annual Meeting, Vancouver, BC, Canada (poster)

1997 University of Toronto, Program in Developmental Biology Symposium, Mount Sinai Hospital, Toronto, ON, Canada (seminar)

1996 Institute of Molecular Pathology, Vienna, Austria (seminar)

1996 Society for Neuroscience 26th Annual Meeting, Washington, DC, USA (poster)

1996 Neuroscience Network Annual Meeting, Ottawa, ON, Canada (poster)

1995 Society for Neuroscience 25th Annual Meeting, San Diego, CA, USA (poster)

MANUSCIPTS IN PREPARATION

Tropepe, V., Gamse, J., Sive, H. Characterization of genomic cis-regulatory elements that mediate Noggin induction of *zic1* transcription in the *Xenopus* neurectoderm.

Tropepe, V., Austin, M., Sive, H. The specification of a distinct mesencephalic territory is regulated by Wnt signaling during early stages of zebrafish gastrulation.

PUBLICATIONS

Hitoshi, S., Alexson, T., **Tropepe, V.**, Donoviel, D., Elia, A.J., Nye, J.S., Conlon, R.A., Mak, T.W., Bernstein, A., van der Kooy, D. (2002). Notch pathway molecules are essential for the maintenance, but not the generation, of mammalian neural stem cells. Genes and Development. 16: 846-858.

*Hitoshi, S., ***Tropepe, V.**, Ekker, M., van der Kooy, D. (2002). Neural stem cell lineages are regionally specified, but not committed, within distinct compartments in the developing brain. Development. 129: 233-244. *co-first authors

Tropepe, V., Hitoshi, S., Sirard, C., Mak, T.W., Rossant, J., van der Kooy, D. (2001). Direct neural cell fate specification in embryonic stem cells: a primitive neural stem cell stage acquired through a default mechanism. Neuron 30: 65-78.

Tropepe, V., Coles, B. L. K., Chiasson, B. J., Horsford, D. J., Elia, A. J., McInnes, R. R., van der Kooy, D. (2000). Retinal Stem Cells in the Adult Mammalian Eye. Science 287: 2032-2036.

Martens, D. J., **Tropepe, V.**, van der Kooy, D. (2000). Separate Proliferation Kinetics of Fibroblast Growth Factor Responsive and Epidermal Growth Factor Responsive Neural Stem Cells within the Embryonic Forebrain Germinal Zone. Journal of Neuroscience 20(3): 1085-1095.

Tropepe, V., Sibilia, M., Ciruna, B. G., Rossant, J., Wagner, E. F., van der Kooy, D. (1999). Distinct Neural Stem Cells Proliferate in Response to EGF and FGF in the Developing Mouse Telencephalon. Developmental Biology 208: 166-188.

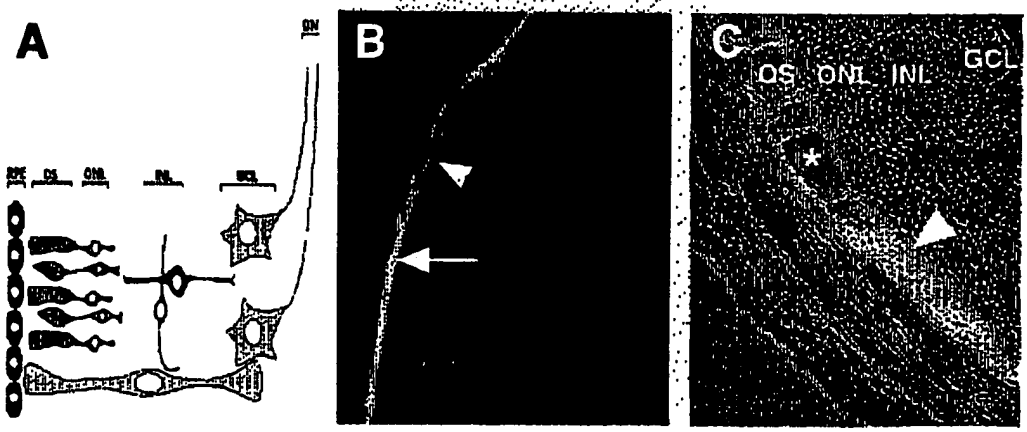
Chiasson, B. J., **Tropepe, V.**, Morshead, C. M., van der Kooy, D. (1999). Adult Mammalian Forebrain Ependymal and Subependymal Cells Demonstrate Proliferative Potential, but Only Subependymal Cells have Neural Stem Cell Characteristics. Journal of Neuroscience 19(11): 4462-4471.

Tropepe, V., Craig, C. G., Morshead, C. M., van der Kooy, D. (1997) TGFα Null and Senescent Mice Show Decreased Neural Progenitor Cell Proliferation in the Forebrain Subependyma. Journal of Neuroscience 17(20): 7850-7859.

Craig, C. G., **Tropepe, V.**, Morshead, C. M., Reynolds, B. A., Weiss, S., van der Kooy, D. (1996). In vivo Growth Factor Expansion of Endogenous Subependymal Neural Precursor Cell Populations in the Adult Mouse Brain. Journal of Neuroscience 16(8): 2649-2658.

Appendix B

Figure 1



Appendix C

TRANSPLANTATION OF RETINAL STEM CELLS FROM ENHANCED GREEN FLUORESCENT PROTEIN TRANSGENIC MICE TO THE RETINAL DETACHMENT MODEL EYES.

Y. Kurimoto; M.A. Shatos; M.J. Young*
Schepens Eye Research Institute, Department of Ophthalmology, Harvard Medical School, Boston, MA, USA

We examined whether photoreceptors lost following retinal detachment can be repopulated by transplanted stem cells of the central nervous system. Retinal stem cells (RSCs) and brain stem cells (BSCs) were isolated from newborn Enhanced Green Fluorescent Protein (EGFP) transgenic mice and expanded in vitro. Retinal detachment was surgically induced in mature normal B6 mice, and RSCs or BSCs were injected into the subretinal space. The mice were sacrificed 2, 7, 14, and 28 days after transplantation, and the eyes examined histologically, including immunohistochemistry and TUNEL staining. A considerable number of cells in the outer nuclear layer (ONL) of the host retina were TUNEL positive 2 days after surgery, indicating cell death of host photoreceptors. In eyes grafted with RSCs, the majority of the grafted cells remained along the outer edge of the ONL and expressed recoverin, which suggested that the cells differentiated along a photoreceptor lineage. Some of the grafted cells migrated into the inner retinal layers and expressed glial fibrillary acidic protein but not recoverin. In eyes transplanted with BSCs, although the majority of the grafted cells remained in the subretinal space, they did not express retina-specific markers. The data suggest that RSCs, but not BSCs, can differentiate along a photoreceptor lineage, perhaps responding to local cues in the retinal microenvironment. RSCs may be useful for the treatment of photoreceptor loss after retinal detachment.

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